

WHAT WE CLAIM IS:

1. A polysiloxane film consisting of a polysiloxane obtained by crosslinking, in the presence of a platinum catalyst, a polysiloxane having an unsaturated aliphatic hydrocarbon group in one molecule and represented by the average structural formula: (1) $R^1_aSiO_{(4-a)/2}$ (where R^1 is a $C_1\sim C_{10}$ monovalent hydrocarbon group and the subscript «a» is a positive number in the range of $0 < a < 2$) with an organosilicon compound having, in each molecule, at least two hydrogen atoms directly bonded to silicon atoms.
2. The polysiloxane film according to Claim 1, in which the polysiloxane represented by the above-mentioned average structural formula (1) comprises $(XR^2_2SiO_{1/2})$ units (where X is a $C_2\sim C_{10}$ monovalent unsaturated aliphatic hydrocarbon group, and R^2 is a $C_1\sim C_{10}$ monovalent hydrocarbon group other than X) and $(R^3SiO_{3/2})$ units (where R^3 is a $C_1\sim C_{10}$ monovalent hydrocarbon group other than X) as essential constitutional units.
3. The polysiloxane film according to Claim 1, in which the polysiloxane represented by the above-mentioned average structural formula (1) comprises $(R^4_nSiO_{(4-n)/2})$ units (where R^4 is selected independently from a $C_1\sim C_{10}$ monovalent hydrocarbon group and a $C_2\sim C_{10}$ monovalent unsaturated aliphatic hydrocarbon group, and «n» is 1, 2, or 3), and $(SiO_{4/2})$ units, and contains an unsaturated aliphatic hydrocarbon group in one molecule.
4. The polysiloxane film according to any of Claims 1 to 3, which does not have a specific light absorption band in the visible wavelength range and has an optical transmissivity of not less than 85% at 400 nm and an optical transmissivity of not less than 88% in the wavelength range of from 500 nm to 700 nm.
5. A crosslinkable polysiloxane composition for film-forming comprising:
 - a polysiloxane having an unsaturated aliphatic hydrocarbon group in one molecule and represented by the average structural formula: (1) $R^1_aSiO_{(4-a)/2}$ (where R^1 is a $C_1\sim C_{10}$ monovalent hydrocarbon group and the subscript «a» is a positive number in the range of $0 < a < 2$);
 - an organosilicon compound having, in each molecule, at least two hydrogen atoms directly bonded to silicon atoms; and
 - a platinum catalyst.
6. A method of manufacturing a polysiloxane film comprising the steps of:
 - forming an uncured film by coating a substrate with a crosslinkable polysiloxane composition comprising a polysiloxane having an unsaturated aliphatic hydrocarbon group in one molecule and represented by the average structural formula: (1) $R^1_aSiO_{(4-a)/2}$ (where R^1 is a $C_1\sim C_{10}$ monovalent hydrocarbon group and the subscript «a» is a positive number in the range of $0 < a < 2$), an organosilicon compound having, in each molecule, at least two hydrogen atoms directly bonded to silicon atoms, and a platinum catalyst;
 - producing a cured film by crosslinking the above-mentioned uncured film; and
 - peeling off the above-mentioned cured film from the above-mentioned substrate.

7. The method of manufacturing a polysiloxane film according to Claim 6, wherein the polysiloxane represented by the above-mentioned average structural formula (1) comprises $(XR^2_2SiO_{1/2})$ units (where X is a $C_2\sim C_{10}$ monovalent unsaturated aliphatic hydrocarbon group and R^2 is independently a $C_1\sim C_{10}$ monovalent hydrocarbon group other than X) and $(R^3SiO_{3/2})$ units (where R^3 is a $C_1\sim C_{10}$ monovalent hydrocarbon group other than X).

8. The method of manufacturing a polysiloxane film according to Claim 6, wherein the polysiloxane represented by the above-mentioned average structural formula (1) comprises $(R^4_nSiO_{(4-n)/2})$ units (where R^4 is selected independently from a $C_1\sim C_{10}$ monovalent hydrocarbon group and a $C_2\sim C_{10}$ monovalent unsaturated aliphatic hydrocarbon group, the subscript «n» is 1, 2, or 3), and $(SiO_{4/2})$ units, and contains in one molecule an unsaturated aliphatic hydrocarbon group.

9. A laminated film comprising an inorganic substance layer on a transparent substrate made from a self-supporting cross-linked polysiloxane that does not have a specific light absorption band in the wavelength range of 400 nm to 800 nm.

10. The laminated film of Claim 9, wherein said inorganic substance layer is a layer of metal or a semiconductor metal oxide applied by vapor deposition.

11. The laminated film according to Claims 9 or 10, wherein said crosslinked polysiloxane film is made from a polysiloxane obtained by crosslinking a polysiloxane that contains an unsaturated aliphatic hydrocarbon group in one molecule and is represented by the following average structural unit formula (1):



(where R^1 is a $C_1\sim C_{10}$ monovalent hydrocarbon group and the subscript «a» is a positive number in the range of $0 < a < 2$) and an organosilicon compound having, in each molecule, at least two hydrogen atoms directly bonded to silicon atoms, said crosslinking being carried out in the presence of a platinum catalyst.

12. The laminated film according to Claim 11, wherein said polysiloxane represented by the above-mentioned average structural formula (1) comprises $(XR^2_2SiO_{1/2})$ units (where X is a $C_2\sim C_{10}$ monovalent unsaturated aliphatic hydrocarbon group and R^2 is a $C_1\sim C_{10}$ monovalent hydrocarbon group other than X) and $(R^3SiO_{3/2})$ units (where R^3 is a $C_1\sim C_{10}$ monovalent hydrocarbon group other than X).

13. The laminated film according to Claim 11, wherein said polysiloxane represented by the above-mentioned average structural formula (1) comprises $(R^4_nSiO_{(4-n)/2})$ units (where R^4 is selected independently from a $C_1\sim C_{10}$ monovalent hydrocarbon group and a $C_2\sim C_{10}$ unsaturated aliphatic hydrocarbon group, the subscript «n» is 1, 2, or 3), and $(SiO_{4/2})$ units, and contains an unsaturated aliphatic hydrocarbon group in one molecule.

14. A method of manufacturing a laminated film by forming an inorganic substance layer in a vacuum film-forming process at a temperature not exceeding 300°C on a transparent

substrate made from a self-supporting cross-linked polysiloxane that does not have a specific light absorption band in the wavelength range of 400 nm to 800 nm.